muscle, depending upon its having been previously boiled, by which the globules were altered, their colouring matter separated, and any connecting medium between them destroyed; in such case, therefore, the skeleton only of the muscular fibre remained.

The muscular fibre which was now selected for examination, was taken from the fasciculi composing the great muscle that lies upon the back of the bullock's neck; it was examined within twenty-four hours after the animal's death. By immersion in water, an integral fibre was separated for inspection in the field of the microscope. Its mechanism corresponded with that of the nervous fibre of a ganglion, but the globules were larger in the proportion of $\frac{1}{200}$ to $\frac{1}{300}$ and $\frac{1}{400}$ parts of an inch.

The gelatinous matter by which the globules adhere together is less elastic than in the nervous fibre, so that the muscular fibre could not be extended to double its length without breaking.

The muscle of a trout exhibited the same appearance as that of the bullock's neck, but the fibres were more brittle.

From the facts stated in this lecture, together with those formerly adduced respecting the structure of ganglions and nerves, Sir Everard observes, that they agree with muscles in consisting of single rows of globules united by a transparent elastic gelatinous matter; the globules, however, differ in size, and the elastic medium is more easily elongated, and restores itself more readily in a nerve than in a muscle. An illustrative drawing accompanies this lecture.

An Account of the Heat of July, 1825; *together with some Remarks upon sensible Cold. By* W. Heberden, *M.D. F.R.S.* Read January 12, 1826. [*Phil. Trans.* 1826, Part II. *p.* 69.]

The temperatures which Dr. Heberden wishes to record in this paper, are those observed on the 15th, 17th, 18th, and 19th of last July, and were respectively 92°, 90°, 96°, and 95°. On the 15th, the wind was S.W., on the other days it blew from the East. The thermometer employed was sensible and accurately graduated, and was suspended upon a lawn, about $5\frac{1}{2}$ feet from the ground; on the first day, in the shade of a laburnum tree, and afterwards from an external branch of a large Portugal laurel; always distinct from any building; exposed to the full influence of the wind, and at the same time sheltered from the actual rays of the sun, and from substances heated by them. The author adds, that the only instance on record of a corresponding elevation of atmospheric temperature was in July, 1808; on the 13th of which month, it appears from the Royal Society's register, the thermometer rose to 93°·5, and Mr. Cavendish's thermometer, at Clapham, to 96°. By way of comparison, Dr. Heberden observes, upon the authority of the late Dr. Hunter, that in the hottest season, and during the hottest part of the day, the range of the thermometer, at Kingston, in Jamaica, is from 85° to 90°.

To these remarks, Dr. Heberden adds some observations on the imperfection of the thermometer, as a measure of the degree of cold

perceptible to the human body in its ordinary exposure to the atmosphere, and which depends upon the rapidity with which its own heat is carried off by the conducting power and currents of the atmosphere. To estimate this insensible cold, the author raised the thermometer to 120°, and then carried it into the open air. As soon as the mercury had fallen to 100°, the rate of its further descent, during every 10″, was noted for half a minute, in different states of the atmosphere in regard to wind and moisture. These experiments, which are given in the form of tables, show the powerful effect of wind in increasing the rate of cooling, and consequently of exciting the sensation of cold in the human body, independent of any actual low temperature of the atmosphere.

On the Transit Instrument of the Cambridge Observatory; being a Supplement to a former Paper. *By* Robert Woodhouse, *Esq. Plumian Professor of Astronomy in the University of Cambridge.* Read January 19, 1826. [*Phil. Trans.* 1826, Part II. *p.* 75.]

This communication is intended merely as a supplement to a former paper on the same subject, printed in the Transactions of this Society, in which a deviation of the transit instrument from the plane of the meridian, arising from a difference of expansion in its braces, was pointed out. As no instance was there given of the magnitude of this deviation, one is here adduced in which the inferior passage of the pole star was found to have been retarded twenty-five seconds in consequence of the sun having been allowed to shine on the upper western brace, the object-glass of the transit being towards the zenith. The author adds, that in consequence of the detection of this source of inequality, he now views with great suspicion all his previous observations of solar transits.

Account of a Series of Observations, made in the Summer of the Year 1825, *for the purpose of determining the Difference of Meridians of the Royal Observatories of Greenwich and Paris; drawn up by* J. F. W. Herschel, *Esq. M.A. Sec. R.S. Communicated by the Board of Longitude.* Read January 12, 1826. [*Phil. Trans.* 1826, Part II. *p.* 77.]

The operations, of which this paper contains an account, were undertaken by the British Board of Longitude, in conjunction with the French Ministry of War, at the invitation of the latter, for the purpose of connecting the Royal Observatories of Greenwich and Paris, by means of signals contemporaneously observed along a chain of stations established for that purpose between them. The signals employed were the explosions of proper quantities of gunpowder, elevated to a great height in the air by rockets fired at three stations, two on the French, and one on the English side of the Channel, and observed at the observatories, and at two stations intermediate between those at which they were fixed. These two stations